

### **REMARKS**

Entry of the foregoing, reexamination and further and favorable reconsideration of the subject application in light of the following remarks, pursuant to and consistent with 37 C.F.R. § 1.112, are respectfully requested.

The Office Action Summary correctly indicates that claims 2-6, 15, 17, 18 and 21-32 are pending in the application. Claims 2-6, 15, 17, 18 and 21-32 are under consideration and stand rejected.

Claim 15 and 26 have been amended to recite that the means for applying a hydrogen peroxide solution comprises a bath of hydrogen peroxide solution.

Claims 4, 5, 21, 23 and 28 have been amended to emphasize that the packaging material retains a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material at the time that it is irradiated.

No prohibited new matter has been introduced by way of the above amendments. Applicants reserve the right to file a continuation or divisional application on subject matter canceled by way of this Amendment.

### **Rejections under 35 U.S.C. § 102**

Claims 15, 17 26 and 29-31 stand rejected under 35 U.S.C. § 102 as allegedly anticipated by Koderia (U.S. Patent No. 4,396,582). The rejection is traversed.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir.

1987). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Claims 15, 26 and 29 recite a bath of hydrogen peroxide. Koderá does not teach or suggest a bath of hydrogen peroxide. Koderá discloses an apparatus comprising only a bath of organic acid or hot water. See, col. 3, lines 22-24. Koderá teaches that all other disinfectant chemicals are inferior. See, col. 1, lines 28-32. Koderá specifically teaches against the use of hydrogen peroxide. See, col. 1, lines 24-27.

Thus, Koderá does not teach the presently claimed invention and the rejection must be withdrawn.

#### **Rejections under 35 U.S.C. § 103**

Claims 15, 26 and 30 stand rejected under 35 U.S.C. § 103 as allegedly unpatentable Koderá, *supra*, in view of Bachman (U.S. Patent No. 4,175,140). The rejection is traversed.

The prior art fails to establish a proper *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

M.P.E.P. § 2143.

The Office has acknowledged that Koderá is silent as to the frequency range of the ultraviolet radiation. The Office has alleged that Bachman cures the deficiency. However, Bachmann fails to cure the deficiencies in Koderá that have been pointed out above. Each of claims 15, 26 and 30 recite a bath of hydrogen peroxide solution. Koderá does not disclose a

bath of hydrogen peroxide solution and specifically teaches against its use as a disinfectant as shown above. Bachman teaches a method that does not utilize hydrogen peroxide and teaches against the use of hydrogen peroxide solution in combination with ultraviolet light. See, Bachmann at col. 6, lines 60-68.

Thus, the combination of Koderia and Bachmann does not disclose all the elements of the invention and the rejection must be withdrawn.

Claims 17-18, 27, and 31-32 are rejected under 35 U.S.C. § 103 as allegedly unpatentable over Koderia, supra, in view of Bachmann, supra, as applied to claims 15, 26 and 30 and further in view of Sizer et al. (U.S. Patent No. 5,843,374). The rejection is traversed.

The Office has acknowledged that Koderia and Bachmann are silent regarding the use of an eximer lamp. The Office has alleged that Sizer cures the deficiency. However, Sizer fails to cure the deficiencies in Koderia and Bachmann that have been pointed out above.

Each of claims 17-18, 27, and 31-32 incorporate the hydrogen peroxide bath of claims 15, 26 and 29. Koderia does not disclose a bath of hydrogen peroxide solution and specifically teaches against its use as a disinfectant as shown above. Bachman teaches a method that does not utilize hydrogen peroxide and teaches against the use of hydrogen peroxide solution in combination with ultraviolet light. Sizer does not teach or suggest the combination of a hydrogen peroxide bath with UV radiation. Sizer does not teach a hydrogen peroxide bath at all, but did report comparative experiments using a spray of hydrogen peroxide solution. Sizer teaches that the combination of hydrogen peroxide spray treatment with UV produced inconsistent results that tended to be worse than the UV treatment alone. Sizer teaches that a combination of spray treatment with water and UV radiation is more effective than hydrogen peroxide and UV radiation. Thus, the cited combination fails to teach all the elements of the claimed invention. Furthermore, like Koderia and Bachmann,

Sizer would also have discouraged a person of ordinary skill in the art from making or using an apparatus as presently claimed. Consequently, the cited combination cannot support a prima facie case of obviousness and the rejection must be withdrawn.

Claim 2-6 21-25 and 28 stand rejected under 35 U.S.C. § 103 as allegedly unpatentable over Ernstsson et al. (U.S. Patent No. 3,884,012) in various combinations with Sizer, supra, Loliger (U.S. Patent No. 3,692,468), DiGeronimo (U.S. Patent No. 4,494,357), and Clark et al. (U.S. Patent No. 5,925,885). The rejections are traversed.

Ernstsson has been alleged to teach the use of a bath of hydrogen peroxide solution (3:28) to apply solution to the surface of packaging material followed by an air knife (3:30) to remove a substantial amount of hydrogen peroxide and thereafter irradiating the packaging material with a UV lamp (3:11). However, Ernstsson does not teach or suggest all that the Office has alleged, because Ernstsson clearly failed to suggest any method comprising retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material.

The Office has alleged that “one of ordinary skill in the art would recognize that Ernstsson sterilizes web material, because the surfaces of the material includes microorganisms that absorb the residual hydrogen peroxide left after the step of applying the air knives.” Office Action dated November 13, 2007 at 20. However, this allegation is contrary to the explicit teachings of Ernstsson.

Ernstsson does not suggest the use of an air knife alone prior to irradiation of the packaging material. Ernstsson teaches that in conjunction with the use of air knives, or without the use of air knives, the packaging material is heated by heaters (32) to evaporate the treatment solution prior to entering a chamber that can include a UV lamp element (11). Indeed, the use of an air knife is only taught as an optional addition to the use of heaters.

Ernstsson teaches that the heaters dry the packaging material “so that the residues of treatment fluids evaporate” before entering the enclosed chamber and optionally being irradiated. See, Ernstsson paragraph bridging cols. 4-5. Ernstsson consistently teaches that the heater is used in conjunction with an air knife so that “residual traces of the treatment fluids are evaporated.” See, Ernstsson at col. 7, lines 25-30. Thus, the method taught by Ernstsson does not permit the retention of a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material.

In contrast with the consistent teachings of Ernstsson that do not include retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material and thereafter irradiating that material, claims 4, 5, 21, 23 and 28 have been amended to emphasize that the packaging material retains a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material at the time that it is irradiated. This feature is also recited in claim 22 as previously presented. Ernstsson clearly fails to teach or suggest the claimed methods.

The secondary references that have been cited do not cure the defects of Ernstsson. Sizer is alleged to teach an eximer lamp. Loliger is alleged to teach a bath temperature for hydrogen peroxide, and DiGeronimo is alleged to teach a temperature for blowing heated air. Clark is alleged to teach the use of polychromatic UV light. Each of the references teach that their individual methods are superior and individually adequate. None of the references suggest their individual teachings are so generally applicable as to be combined with Ernstsson as the Office has proposed.

None of the references suggest that a synergistic effect can be realized in a method in which the packaging material retains a trace amount of hydrogen peroxide at the time it is irradiated. Furthermore, the combination of Ernstsson with Sizer and Loliger, DiGeronimo, and Clark taken all together does not teach all the elements of the claimed invention. Thus, the combination cannot support a prima facie case of obviousness as to the rejected claims and the rejections must be withdrawn.

### CONCLUSION

In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order. Such action is earnestly solicited.

In the event that there are any questions relating to this application, it would be appreciated if the Examiner would telephone the undersigned concerning such questions so that prosecution of this application may be expedited.


The Director is hereby authorized to charge any appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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